Community Involvement in Eelgrass Protection, Port Townsend, Washington

Pat Pearson, Contractor, Jefferson County Marine Resources Committee (MRC)
Judy D'Amore, Port Townsend Marine Science Center, Jefferson County (MRC)

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With efforts to map nearshore habitat only a few decades old, we will never know exactly how much of the Port Townsend Bay shoreline was bordered by eelgrass beds historically. Since the bay is surrounded, by soft, eroding bluffs and sandy beaches, and since environmental conditions there still support extensive eelgrass beds today it is likely that eelgrass was once abundant along the waterfront. The city of Port Townsend was settled in 1852 and, like many cities of its day, its economy was tied to the water. Ships anchored off shore and docks multiplied along the waterfront. The city's edge expanded over the water to give the shipping industry maximum waterfront access, and natural shorelines gave way to sea walls and streets supported by pilings, a construction practice still visible today. Port Townsend now has fewer docks and fewer large sailing ships anchor offshore, but maritime activities still play an important role in the community.

Unlike days past, today we recognize the importance of eelgrass as essential habitat for federally protected salmon species and nursery habitat for other key species such as Dungeness crab and lingcod. We also understand that eelgrass can be impacted by anchoring boats as well as by over-water structures that limit the incident light needed by these plants. An underwater videography survey of the Port Townsend waterfront showed gaps in the eelgrass cover adjacent to existing docks (Norris, 1999). With the goal of enhancing eelgrass habitat along this urban shoreline, two projects addressing impacts to eelgrass have been initiated by local groups and are receiving support within the community.

NWMC Dock Eelgrass Restoration
When plans emerged for development of the Northwest Maritime Center (NWMC) on the Port Townsend waterfront, it became evident that environmental concerns could pose an obstacle to restoring a derelict 1930's era dock on the site for activities of the Center. Although the dock in its existing form likely impacted adjacent eelgrass beds, an opportunity was seen to create a new demonstration dock that would provide the desired moorage yet allow nearshore habitat functions to be restored. In 2001, the NWMC assembled a dock design team that included scientists from Battelle Marine Sciences Laboratory, regional architects, engineers, educators, regulators and user groups. Together they created an innovative dock design that minimizes human impact on nearshore habitat and marine life while still meeting the needs of the facility's educational program users and the public.

To achieve this, the dock trestle was extended 18 m. further offshore and reflective panels were installed under the dock to increase the light reaching the water below. In addition, creosote pilings were replaced by steel pilings to reduce shade and water pollution and other design and materials features were incorporated to further reduce shading (see Diefenderfer et al. 2004).

In May, 2004, when construction of the new 87 m. dock was completed, the Port Townsend Marine Science Center took on the role of coordinating community involvement to help in replanting eelgrass around the structure in areas previously shaded by the old dock. Over a one-week period, 53 adult and student volunteers worked with research divers from Battelle Marine Science Laboratories bundling the eelgrass shoots for the divers to plant below the dock.

Monitoring the restoration site has become a community effort as well. A monitoring plan utilizing dive-surveys and measurements of photosynthetically active radiation (PAR) was developed and is being carried out by Battelle. According to the plan, students from two local high schools, working with staff at the Port Townsend Marine Science Center have been conducting additional three-season monitoring of light attenuation and light available to eelgrass along the edge of the dock according to the plan. The

students also record water quality parameters, sample the plankton community and monitor habitat utilization by birds to help provide additional information on recovery of the habitat. A volunteer diver works with the students to photograph changes in eelgrass cover below the dock, and students are documenting the colonization of steel pilings by organisms.

This project is completing the first year in a three-year program giving students experience working as part of a scientific team, learning how to carry out a field monitoring program, and becoming aware of career opportunities in the marine sciences.

Port Townsend Bay Eelgrass Voluntary Anchor Protection Zone
Port Townsend is a popular destination for pleasure boaters in Washington's inland waters. During boating season, the downtown waterfront is heavily used as an anchorage. During festivals and events such as the Wooden Boat Festival 50 or more vessels can be seen anchored off the town waterfront. Some vessels end up anchoring in the eelgrass meadow that extends more or less continuously from the Port Townsend boat Haven to Point Hudson.

The Port Townsend's voluntary "no anchor" zone, is a project initiated by the Jefferson County Marine Resources Committee (MRC). The Jefferson County MRC, working to carry out the goals of the Northwest Straits Initiative, saw an opportunity to protect an area of critical habitat through community education and outreach. Since the eelgrass beds along the waterfront extend only a short distance offshore, the committee recognized that with information and encouragement, boaters might be willing to anchor out in slightly deeper water where the habitat wouldn't be damaged.

The MRC was aware that support from community groups would be critical to the success of this project. Early on, presentations were made to the City of Port Townsend, the Chamber of Commerce, the Port of Port Townsend, the Northwest Maritime Center, the Wooden Boat Foundation and other groups, explaining the project and looking for support. Initially concerns were expressed that boaters might be discouraged from visiting the community. In response to this feedback, the committee dropped plans to approach boats on the water and instead provided information in a friendly, non-threatening way from the shore. Tools for community education included signage along the waterfront, distribution of brochures and installation of seasonal marker buoys delineating the edge of the eelgrass beds and encouraging boaters to anchor deeper. With the help of volunteer divers, a total of 8 marker buoys were installed and maintained along the deepwater edge of eelgrass during the summer of 2004. Mooring buoys were not part of this project because of cost and liability issues, but other civic groups may chose to take on their installation and maintenance to further protect eelgrass at a later time.

By the end of the first season the project had gained acceptance within the community, and surveys conducted during peak boating events showed that the percentage of vessels anchored within the eelgrass dropped from 20% during the 2003 boating season to 1.4% in the summer of 2004.

It is hoped that visitors to Port Townsend will return home to other parts of Puget Sound inspired by these two innovative eelgrass protection and restoration projects and find ways of applying these models to habitats in their own communities.

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